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TREATMENT OF RABIES.¹

REPORT OF A CASE TREATED UNSUCCESSFULLY WITH QUININE.

By C. L. WILLIAMS, Assistant Surgeon, United States Public Health Service.

In July, 1913, Moon² reported experiments on dogs in which three of these animals had recovered from rabies upon treatment with quinine sulphate. Three controls not given quinine ran the usual course of the disease, terminating in death. In October, 1913, Harris³ reported a case of rabies in a man ending in recovery after intravenous administration of quinine and urea hydrochlorate. No subsequent reports of the use of quinine in this disease have come to the writer's notice.

The following is the report of a typical case of rabies in which quinine was administered without beneficial results:

Patient W. A. S., aged 4 years, male, white. Bitten by bull terrier at 11 a. m., November 2, 1913, near Luna Park, Va., while on a visit to a relation, who owned the dog. Wound was a deep laceration across middle of nose and deep puncture of upper lip. Painted with iodine two hours later and healed readily.

The dog had shown signs of disease while playing with child and child's father. He jumped on the father threateningly and was knocked off, immediately snapping the child in the face. The dog was shot that evening, although the owner protested that it had shown no signs of sickness. The dog's brain was examined at the Bureau of Animal Industry, where it was found to contain negri bodies. There was no history of the dog having bitten other persons or animals.

The child was brought to the Hygienic Laboratory at 3.30 p. m., November 4, and antirabic treatment was immediately begun. The course of the treatment was uneventful, a slight local reaction being present on two days. On November 23, the last day of treatment, the parents stated that the child had been fretful during the preceding night and vomited once or twice. When seen at the laboratory the patient was in excellent spirits and appeared normal and was taken home by Dr. Biggs, who was in attendance on the case. Dr. Biggs reported that the child was restless at that time and spit up a great deal of saliva. About 6 o'clock that evening the child's father called Dr. Biggs on the telephone, reporting that the boy was nervous and restless and had been vomiting. An enema was prescribed and calomel and salol in small doses. At 6 o'clock next morning Dr. Biggs was again called and on going to see the patient found him extremely

¹ The writer is indebted to Dr. Rozier Biggs, of Washington, D. C., for permission to publish this history of the case.

² Journ. Infect. Dis., July, 1913.

³ Journ. A. M. A., Oct. 25, 1913.

excited and in a restless condition, crying out almost continuously with occasional screams, spitting large amounts of saliva and vomiting at intervals. Codeine and sodium bromide were prescribed by rectum and one dose one-eighth grain codeine was given by mouth.

At 11 a. m. the child was visited again by Dr. Biggs, accompanied by Dr. John F. Anderson, Dr. A. M. Stimson, and Dr. C. L. Williams, of the Hygienic Laboratory. The patient was found in a wildly excited state, never still for an instant, but continually throwing out his arms or legs in jerky movements and twisting from one position to another. Saliva flowed from his mouth in an almost steady stream, while at intervals he vomited considerable quantities of dark-brown liquid, evidently blood. He continually cried for water, occasionally varying to milk or tea, but when liquid was brought he pushed it aside, or if swallowing was attempted the fluid was immediately rejected. His parents stated that he had been crying for water, but was unable to drink during the whole night. His restlessness made it impossible to take his temperature; the skin was warm to the touch and pulse rate high. He was very susceptible to external stimuli, unexpected touches causing convulsive movements and light drafts of air from a fan causing him to cry out and shrink away.

A diagnosis of rabies being clear, it was decided at conference to administer quinine intravenously as advised by Moon and Harris as the only treatment offering any hope of cure. Accordingly at noon (12) the child was anesthetized with chloroform for five minutes while 4 grains quinine and urea hydrochloride dissolved in 2 cubic centimeters sterile salt solution were injected in one of the superficial cervical veins. No effect was observed for 45 minutes, when he became a little less restless. About 1 p. m. the vomiting of blood became more frequent and in greater amount, while at the same time a partial paralysis of the throat became evident, the vomitus being ejected with great difficulty, the child nearly suffocating on two occasions. At about 1.50 p. m., after vomiting about 3 ounces of dark-brown blood, which nearly strangled the patient, he had a slight convulsion. When this passed off the child remained very quiet and was distinctly cyanosed. At 2 p. m. he was given an intramuscular injection of 4 grains of quinine and urea hydrochloride in the left buttock, although with hardly any hope of good results. The child remained quiet and cyanosed, and at 2.50 p. m. died from respiratory failure. No autopsy was allowed. Three rabbits and two guinea pigs were injected intramuscularly with some of the saliva. One of the guinea pigs died the next day. The other guinea pig and all of the rabbits have remained well to time when last seen, March 28, 1914.